

CLAIMS

What is claimed is:

1. A paper feeder of an image forming apparatus having an image forming unit, comprising:

a plurality of paper feeding paths along which a printing paper is fed; and

a main feed roller along which the printing paper is conveyed to the image forming unit of the image forming apparatus,

wherein a plurality of paper feeding paths are disposed along an outer circumference of the main feed roller.

2. The paper feeder of claim 1, wherein the paper feeding paths are confluent along a connecting conveyance path by the main feed roller, and the connecting conveyance path is connected to a main conveyance path which guides the printing paper to the image forming unit of the image forming apparatus.

3. The paper feeder of claim 2, further comprising:

a sub feed roller which is rotatably disposed on the connecting conveyance path.

4. The paper feeder of claim 3, wherein the sub feed roller adjusts and aligns a position of the printing paper which is conveyed along the connecting conveyance path.

5. The paper feeder of claim 4, further comprising:

a paper sensor disposed on the connecting conveyance path and between the main feed roller and the sub feed roller to determine whether the printing paper being conveyed is a transparent material.

7. The paper feeder of claim 1, comprising:

at least one pinch roller rotating in tight contact with an outer circumference of the main feed roller, and disposed at an exit part of the paper feeding paths.

6. The paper feeder of claim 3, further comprising:

a pinch roller assisting the conveyance of the printing paper by rotating in tight contact with an outer circumference of the sub feed roller.

8. The paper feeder of claim 1, wherein the paper feeding paths comprise:

a cassette conveyance path to guide the printing paper fed from at least two paper feeding cassettes.

9. The paper feeder of claim 8, wherein the paper feeding paths further comprise:

a tray conveyance path to guide the printing paper fed from a manual paper feeding tray.

10. The paper feeder of claim 8, wherein the paper feeding paths further comprise:

a return conveyance path along which the printing paper is returned to provide double-sided printing.

11. The paper feeder of claim 1, wherein the paper feeding paths further comprise:

a tray conveyance path to guide the printing paper which is fed from a manual paper feeding tray.

12. The paper feeder of claim 1, wherein the paper feeding paths further comprise:

a returning conveyance path along which the printing paper is returned to provide double-sided printing.

13. A paper feeder of an image forming apparatus having an image forming unit, comprising:

a main feed roller conveying a printing paper to the image forming unit of the image forming apparatus;

a connecting conveyance path connected with a main conveyance path inside a body of the image forming apparatus;

a plurality of paper feeding paths disposed along an outer circumference of the main feed roller, and being confluent along the connecting conveyance path by the main feed roller;

a sub feed roller rotatably disposed on the connecting conveyance path to adjust and align a position of the printing paper which passes along the connecting conveyance path; and

first, second and third pinch rollers being in tight contact with outer circumferences of the main feed roller and the sub feed roller to assist the conveyance of the printing paper, wherein

the paper feeding paths comprise,

first and second paper feeding paths along which the printing paper from two paper feeding cassettes are fed,

a third paper feeding path along which the printing paper from a manual paper feeding tray is fed, and

a fourth paper feeding path along which the printing paper inverted is returned to provide double-sided printing.

14. An image forming apparatus comprising:

an image forming unit forming a desired image on a printing paper;

a main conveyance path guiding the printing paper to the image forming unit;

a paper feeding unit comprising at least one paper feeding cassette and a paper feeding tray each storing a plurality of printing paper; and

a paper feeder conveying the printing paper toward the main conveyance path, wherein the paper feeder comprises,

a plurality of paper feeding paths along which the printing paper fed from the paper feeding unit is guided, and

a main feed roller conveying the printing paper, the paper feeding paths disposed along an outer circumference of the main feed roller.

15. The image forming apparatus of claim 14, wherein the paper feeding paths are confluent along a connecting conveyance path by the main feed roller, and the connecting conveyance path is connected with the main conveyance path.

16. The image forming apparatus of claim 14, wherein the paper feeder further comprises:

a sub feed roller rotatably disposed on the connecting conveyance path to adjust and align a position of the printing paper which passes along the connecting conveyance path.

17. The image forming apparatus of claim 16, wherein the paper feeder further comprises:

a paper sensor disposed on the connecting conveyance path and between the main feed roller and the sub feed roller to determine whether the printing paper being conveyed is transparent.

18. The image forming apparatus of claim 14, comprising:

a pinch roller rotating in tight contact with an outer circumference of the main feed roller, and disposed at an exit part of the paper feeding paths.

19. The image forming apparatus of claim 18, further comprising:

a pinch roller assisting the conveyance of the printing paper by rotating in tight contact with an outer circumference of the sub feed roller.

20. The image forming apparatus of claim 14, wherein the paper feeding paths comprise:

a cassette conveyance path to guide the printing paper fed from at least one paper feeding cassette.

21. The image forming apparatus of claim 20, wherein the paper feeding paths further comprise:

a tray conveyance path to guide the printing paper fed from a manual paper feeding tray.

22. The image forming apparatus of claim 20, wherein the paper feeding paths further comprise:

a return conveyance path along which the printing paper is returned to provide double-sided printing.

23. The image forming apparatus of claim 14, wherein the paper feeding paths further comprise:

a tray conveyance path to guide the printing paper fed from a manual paper feeding tray.

24. The image forming apparatus of claim 14, wherein the paper feeding paths further comprise:

a returning conveyance path along which the printing paper is returned to provide double-sided printing.